

Pages 81-90 Courtesy of MGA MELCO SALES INC.

5. ALIGNMENT PROCEDURES

5.1 Required Meter

10.7 MHz SWEEP GENERATOR
FM SIGNAL GENERATOR
AM SIGNAL GENERATOR
OSCILLOSCOPE
CIRCUIT TESTER
ALIGNMENT DRIVER

5.2 Caution of Adjustment

- For turning the screw core of the oscillation transformer and intermediate frequency transformer, use of the driver made of bakelite stick is recommended for avoiding aberration due to adjusting.
- The output of the signal generator shall be kept within the lowest level sufficient to read the output indication.

5.3 Procedure of Adjustment

FM Section

Proce- dure	Circuit	Generator and Oscilloscope Coupling	Generator frequency	Dial Setting	Adjust	Remarks
1	IF circuit	Figs. 1, 2	10.7 MHz	Point of noninter- ference	T ₁₀₁ T ₁₅₁ T ₁₅₂	Center frequency be decided of ceramic filter. If the phase is delayed by a few at 10.7 MHz, adjust for the wave from large and sum- mary. Adjust the height by VR ₁₅₁ .
2					VR ₁₅₁	
3					Repeat procedures 1 – 2	
4	"	Figs. 1, 3	10.7 MHz	Point of noninter- ference	T ₁₅₃	Adjust T ₁₅₃ to make the linear part of the S curve sharp and the wave from large.
5					Repeat procedures 4	
6	Oscillation circuit	Figs. 4, 5	87 MHz 109 MHz	Low freq. end stop High freq. end stop	VC ₁₀₃	Satisfy the receiving frequency range from 86.0 – 108.3 MHz.
7	RF circuit	Figs. 4, 5	98 MHz	Tuned to signal	VC ₁₀₁ VC ₁₀₂	Adjust VC ₁₀₁ , VC ₁₀₂ and get the maximum voltage of the output.

Center frequency of ceramic filter

Color	Center frequency
Red	10.70 ± 0.03 MHz
Black	10.64 ± "
White	10.76 ± "
Orange	10.73 ± "
Blue	10.67 ± "

AM Section

Proce- dures	Circuit	Signal generator connection	Signal generator frequency	Radio dial setting	Indicator con- nection	Adjust	Remarks
1	IF circuit	Fig. 6	262.5 KHz (400 Hz Mod.)	Point of noninterference near 1600 KHz	Fig. 7	T ₅ , T ₄	Try to equalize the degree of diminution near ± 3 KHz
2						T ₃ , T ₂	
3						Repeat procedures 1 – 2	
4	Oscillation circuit and RF circuit	Fig. 8	1630 KHz	High freq. end stop	"	VC ₃	Tune in
5			510 KHz	Low freq. end stop	"	T ₁	Tune in
6					"	Repeat procedures 2 – 3	
7			1400 KHz	1400 KHz	"	VC ₂ VC ₁	Adjust VC ₁ , VC ₂ and get the maximum voltage of the output.
8			600 KHz	600 KHz	"	T ₁	Turn T ₁ gradually and find the maximum sen- sitivity near 600 KHz.
9			1400 KHz	1400 KHz	"	VC ₃	When the receiving fre- quency has changed because of adjusting 8, adjust VC ₃ to correct.
10					"	Repeat procedures 7 – 9	Check the range of the frequency of the received wave. This is the end of the adjustment.

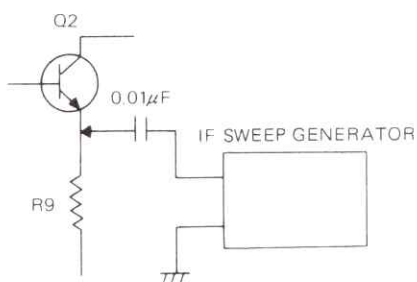


Fig. 6

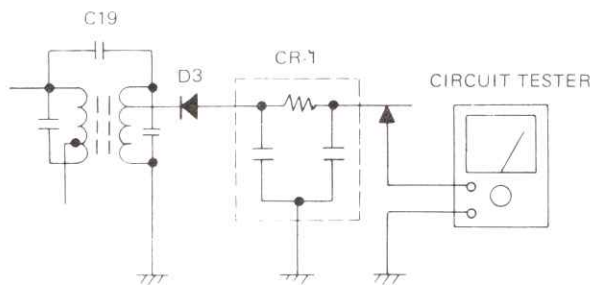


Fig. 7

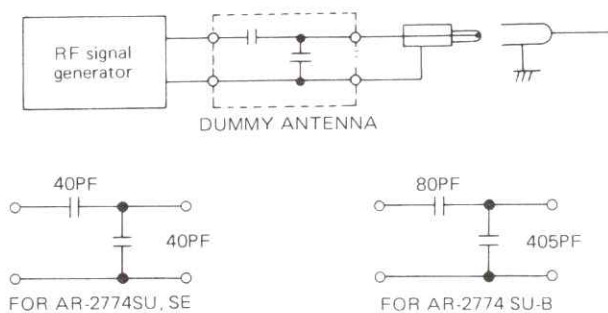


Fig. 8

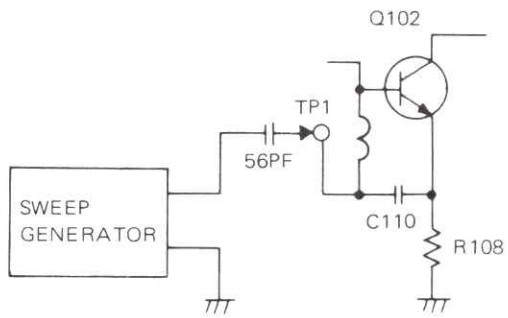


Fig. 1

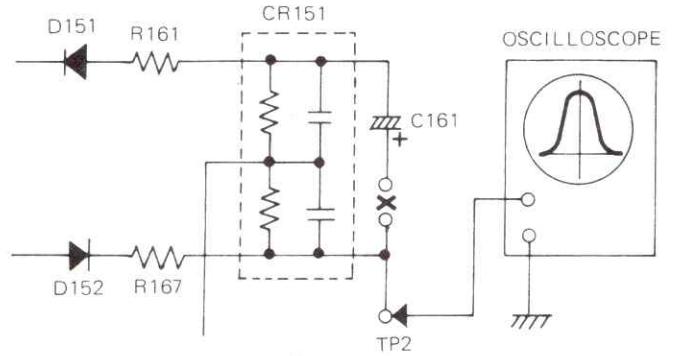


Fig. 2

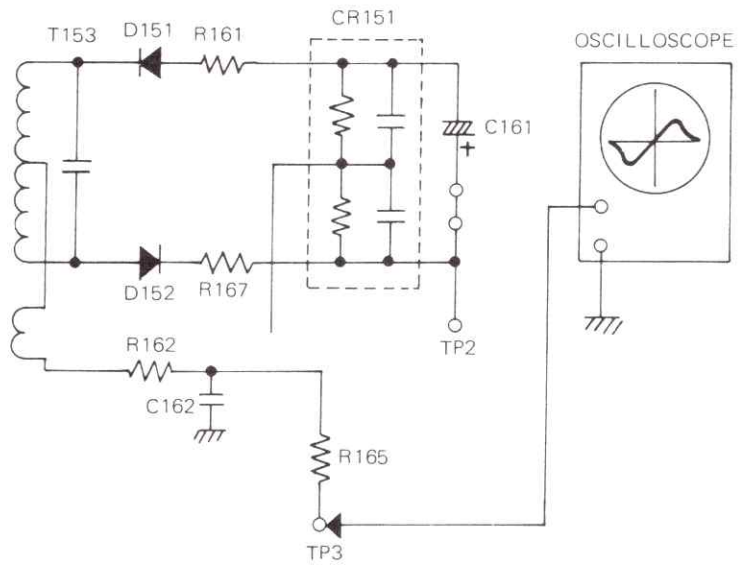


Fig. 3

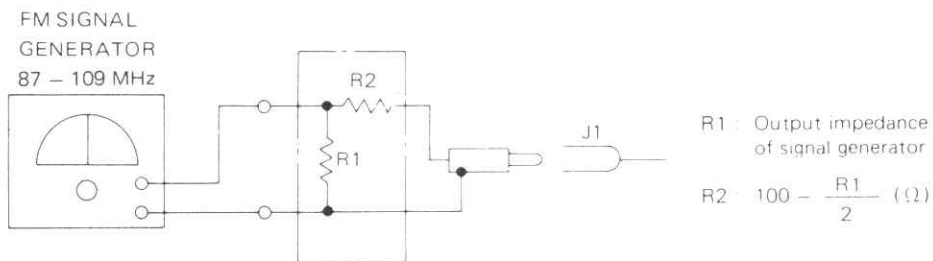


Fig. 4

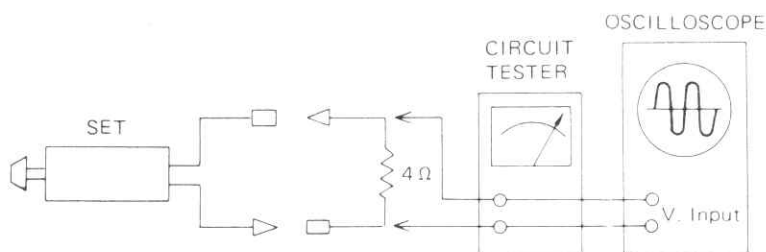
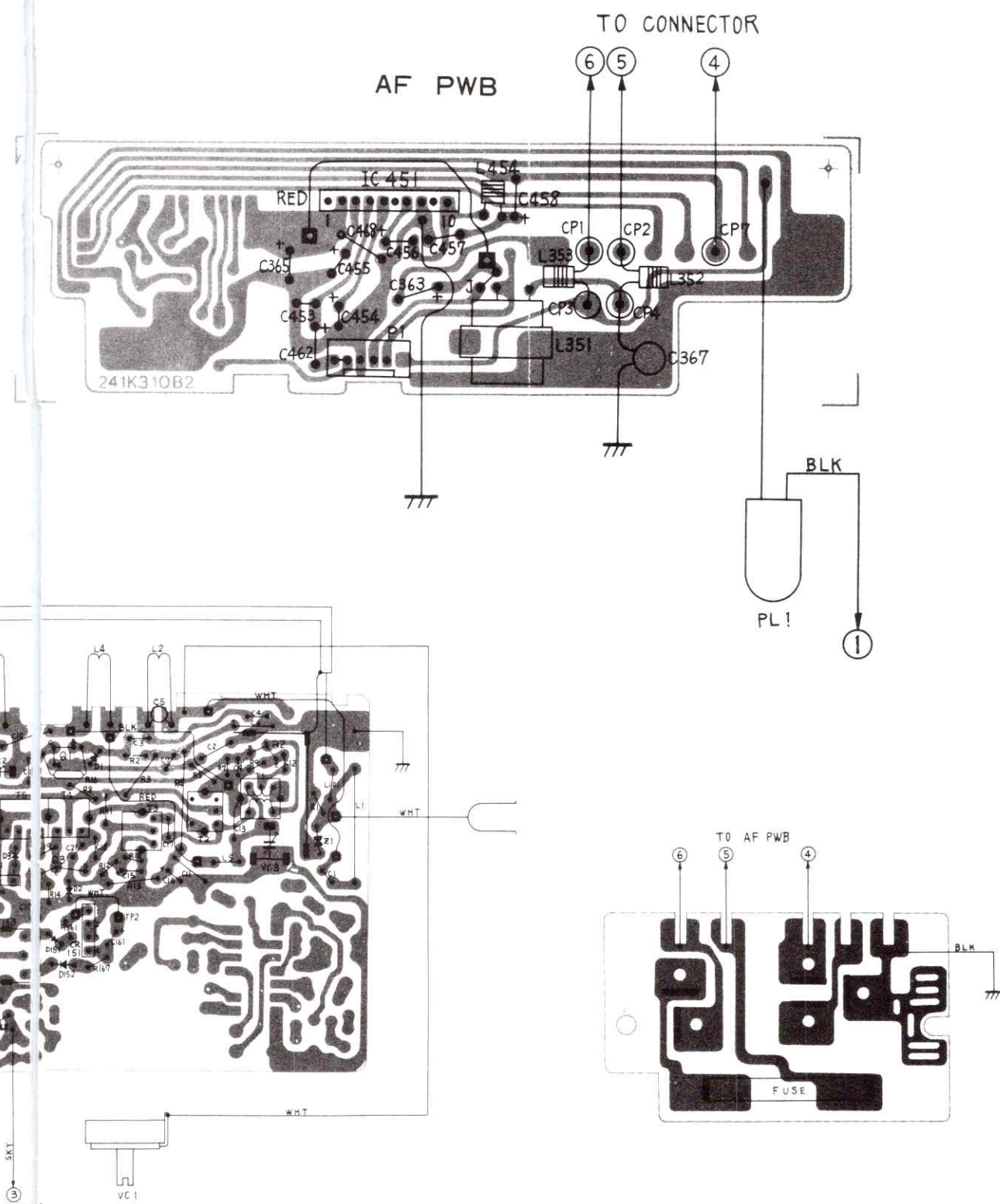
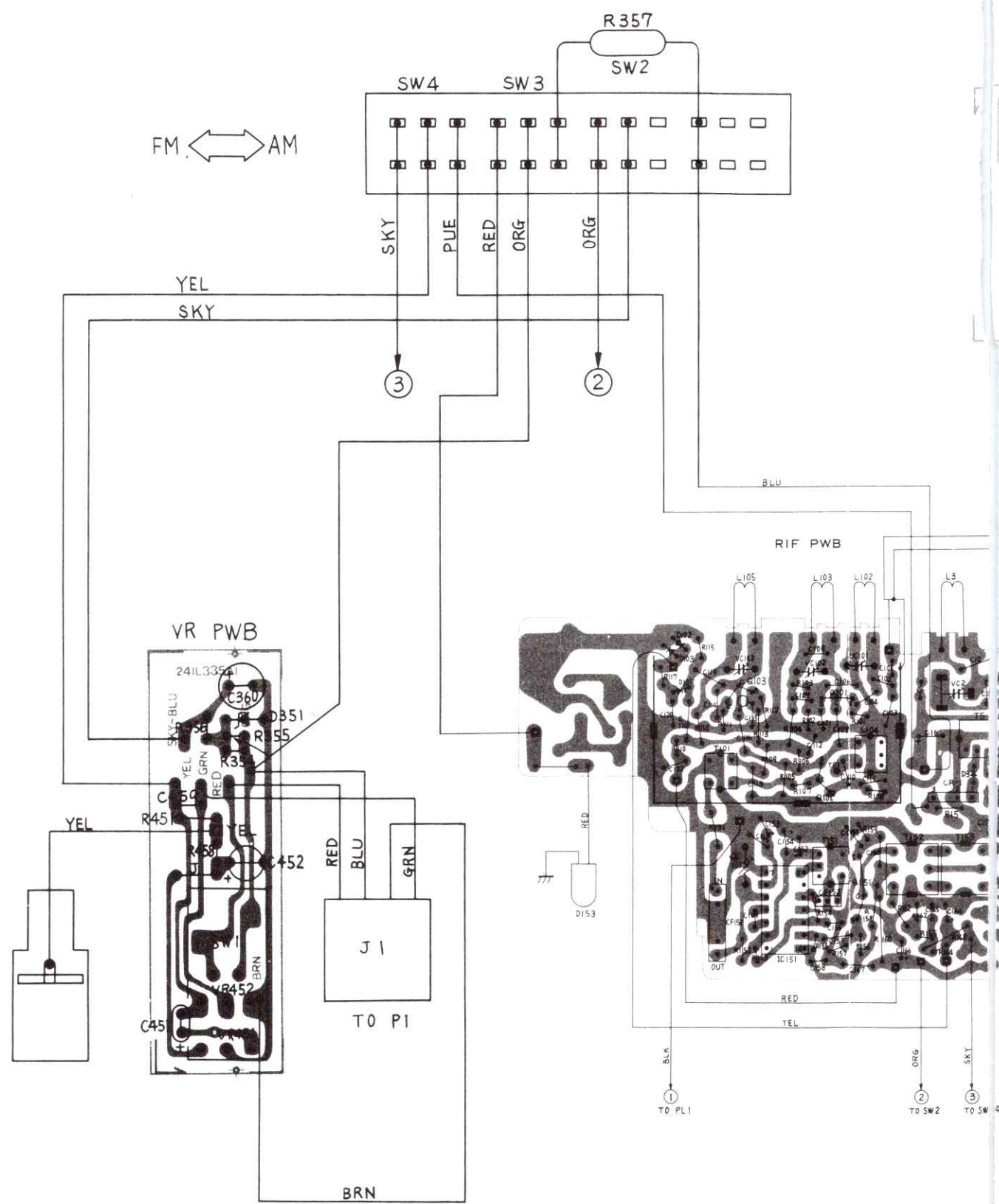


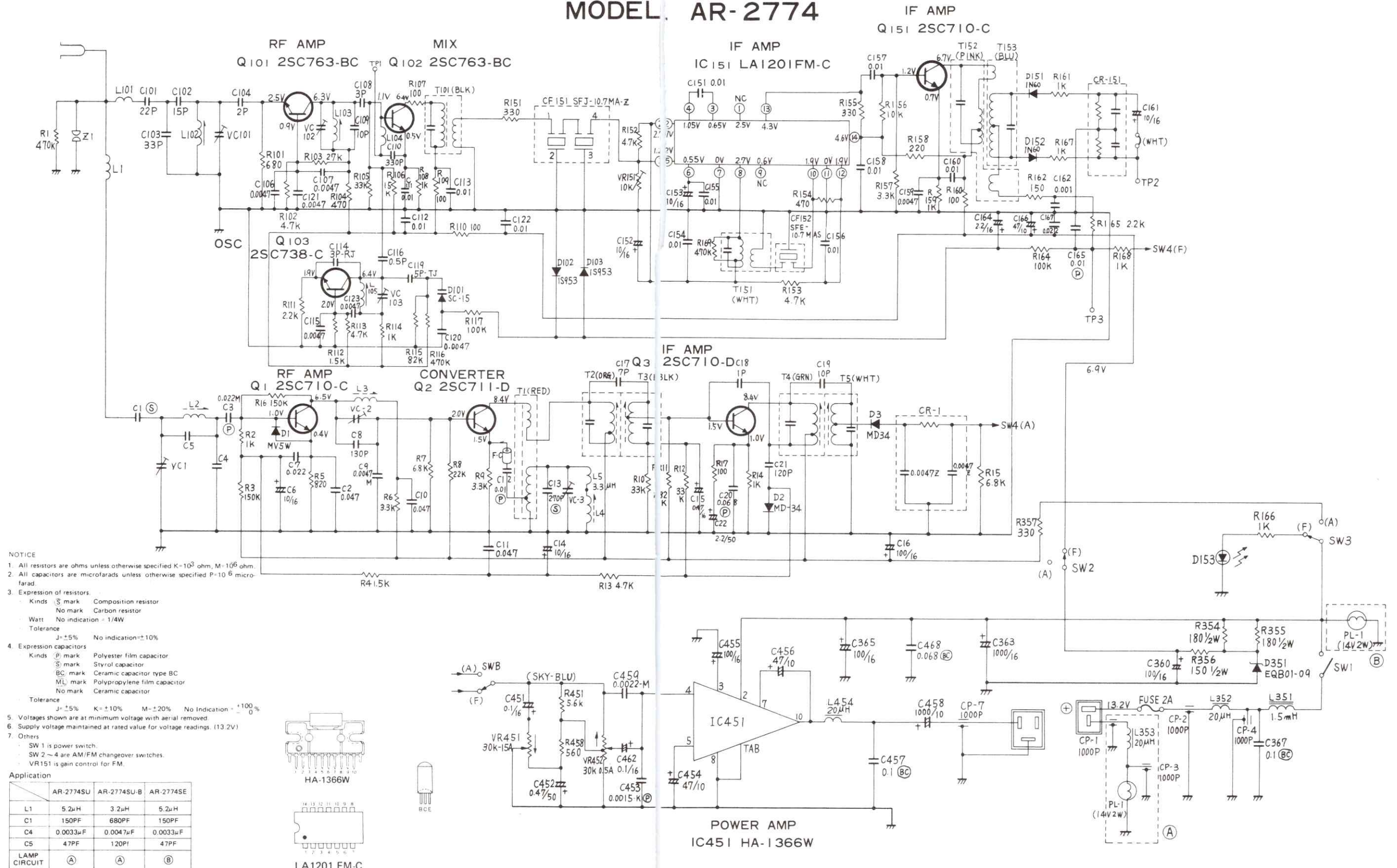
Fig. 5

PARTS LIST

REF. No.	PART No.	DESCRIPTION	REF. No.	PART No.	DESCRIPTION	
CAPACITORS AND RESISTORS			F, C	441M00101	Ferrite Core	
VR 451,452 151	122 L06601	VR-Double Shaft		449 L02501	Socket ANT	
	127M02201	VR-Semifixed		452 L01802	Connector-4P	
	141 P02001	Ceramic Capacitor 1000PF		452 L02901	Connector	
	141 P02003	" 1000PF		452 L02902	"	
CR 151 1	149 L00101	CR-Multiple		560 K06502	Chassis	
	149 L00201	"		590 K13701	Upper Cover	
VC 101-103 2, 3 1	202 L00301	C-Trimmer		590 L55101	Shield case	
	202 P10401	"		590M92201	Shield Frame	
	202 P10605	"		590M92301	Shield Cover	
SEMICONDUCTORS				591M01701	Shield Plate	
Q 103 1, 151 3 2	260 P05403	TR 2SC738-C		591M01801	Lamp Holder	
	260 P17103	" 2SC710-C		591M01902	Bracket-TR	
	260 P17105	" 2SC710-D		591M28901	Heat Sink	
	260 P17503	" 2SC711-D		702 L03201	Panel	
101, 102	260 P17605	" 2SC763-B, C		704M12501	Shaft Trimmer (SU, SUB)	
D2, 3	264 P00401	Diode MD34		704M14101	" (SE)	
	264 P01306	" IN60P		707 L04007	Dial (SE)	
151, 152	264 P07501	" SC-15		707M04607	" (SU, SUB)	
101	264 P10507	" EQB-01-09		768M04702	Back Plate	
351	264 P11701	" IS953		923 K17904	Assy PWB AF (SU, SUB)	
102, 103	264 P14101	Diode LE SLP-214B		923 K17905	" (SE)	
153	264 P14101	Diode LE SLP-214B		923 K20103	Assy PWB RIF (SUB)	
1	265 P04301	Varistor MV-5W		923 K20104	" (SU, SE)	
IC 151 451	266 P30402	IC LA1201 FM-C		923 L40102	Assy PWB VR	
	266 P32401	" HA1366 W		241M09201	PWB LED	
COILS AND TRANSFORMERS				943 L31808	Assy Panel (SU, SUB)	
L 104 5 1 1	295 K03402	Tuner (AR-2774SU, SE)		986 L01401	Assy Pointer	
	295 K03403	" (AR-2774SU-B)		704 L03201	Knob-A (SU, SUB)	
	320 D04601	Coil Trap		704 D91802	" (SE)	
	351 D02102	Coil Choke		704 L03301	Knob-B (SU, SUB)	
1	351 L00101	" (SUB)		704M01902	" (SE)	
1	351 L00103	" (SU, SE)		480 P61306	SP PO-1509F (SU, SUB)	
454	351M00201	"		480 P61306	" " (SE)	
351	351 P00105	Trans Choke		480 P61304	" PO-1509D (SE)	
101	361M00101	Coil RF		281 K01503	Pillar ANT (SU, SE)	
T 1 152 153 101	373M00201	Trans OSC		281 K01504	" (SE)	
	374 C00401	Trans IF (PINK)		242 L09803	Lead-A (SU)	
	374 C00402	" (BLU)		242 L09804	" (SUB)	
	374 L00201	" (BLK)		590 L50302	Bracket (SUB)	
151	374 L00202	" (WHT)				
2	374 L00501	" (ORG)				
4	374 L00502	" (GRN)				
5	374 L00503	" (WHT)				
3	374 L00504	" (BLK)				
OTHERS						
Z 1 PL-1 CF151, 152	224 D01901	Air Gap				
	242 L15202	Lead Connector-4P				
	253 P01204	Pilot Lamp				
	296M00301	Ceramic Filter				



SCHEMATIC DIAGRAM MODEL AR-2774



Trouble	Circuit	Causes	Repair
Oscillatory case	AF circuit	<ul style="list-style-type: none"> • C455, C454, C456 open 	<ul style="list-style-type: none"> • Replace
	Power source circuit	<ul style="list-style-type: none"> • C363, C365 open 	<ul style="list-style-type: none"> • Replace
	RF and IF circuit	<div>AM</div> <ul style="list-style-type: none"> • C16 open 	<ul style="list-style-type: none"> • Replace
Tuning difficulty	AFC circuit	<div>FM</div> <ul style="list-style-type: none"> • Diode D2 open • R115, R116 open 	<ul style="list-style-type: none"> • Replace
	IF circuit	<div>AM</div> <ul style="list-style-type: none"> • U curve off 	<ul style="list-style-type: none"> • Readjust

6. GUIDE TO TROUBLE REPAIR

Trouble	Circuit	Causes	Repair
No sound at all	Power source circuit	<ul style="list-style-type: none"> • Fuse open • Coil L351 open • Switch SW₁ on volume control damaged • D351 short • C365, C368, C363 short 	<ul style="list-style-type: none"> • Replace • Replace or soldering • Replace • " • "
	AF circuit	<ul style="list-style-type: none"> • Voice coil of speaker open • CP7 short • C462, C458 open • IC451 open or short • C454, C456, C455 capacity decreasing • Volume control VR452 damaged 	<ul style="list-style-type: none"> • Replace or soldering • Replace • " • " • " • "
	RF, IF circuit and Detection circuit	FM <ul style="list-style-type: none"> • Transistor Q101, Q102, Q151 and IC151 open or short • IFT, T101, T152, T153 open or short • Coil, L101, L102, L103 open or short • Bias resistance open • R110, R151, R162, R165 open • C101, C102, C104, C108, C157 open • C161, CR151 short • CF151, CF152 open 	<ul style="list-style-type: none"> • Replace • " • " • " • " • " • " • "
		AM <ul style="list-style-type: none"> • Transistor Q1, Q2, Q3 open or short • IFT, T1, T2, T3, T4, T5 open or short • Coil, L1, L2, L3, L5 open • C1, C3, C12 open • Diode D3 open • CR1 open or short 	<ul style="list-style-type: none"> • Replace • " • " • " • " • "
Low sound and low sensitivity	AF circuit	<ul style="list-style-type: none"> • IC451 deteriorated • Bias resistance varying 	<ul style="list-style-type: none"> • Replace • "
	RF, IF circuit and detection circuit	FM <ul style="list-style-type: none"> • Q102, Q103 and IC151 deteriorated • Diode D151, D152 deteriorated • Radio frequency off • U curve off • Capacitor inserted in IFT open • C111 capacity varying 	<ul style="list-style-type: none"> • Replace • " • Readjust • " • Replace • "
		AM <ul style="list-style-type: none"> • Transistor Q1, Q2, Q3 weak • Diode D2 weak • Capacitor in IFT open • C6, C7, C20 capacity varying • Bias resistance varying 	<ul style="list-style-type: none"> • Replace • " • " • " • "
Distorted sound	AF circuit	<ul style="list-style-type: none"> • IC451 damaged 	<ul style="list-style-type: none"> • Replace
	RF, IF circuit detection and AGC circuit	FM <ul style="list-style-type: none"> • Tuning improper • S curve off • U curve off 	<ul style="list-style-type: none"> • Recover tuning • Readjust • "
		AM <ul style="list-style-type: none"> • Diode D2 weak • R4, R13, resistance varying or open 	<ul style="list-style-type: none"> • Replace • "